

REMARKS

Claims 1-20 were examined. Claims 1, 14 and 19 are amended. Claims 1-20 remain in the Application.

The Patent Office rejects claims 1-4, 6-7 and 11 under 35 U.S.C. §102(b) and claims 5, 8-10 and 12-20 under 35 U.S.C. §103(a). Reconsideration of the rejected claims is respectfully requested in view of the above amendments and the following remarks.

A. 35 U.S.C. §102(b): Rejection of Claims 1-4, 6-7 & 11

The Patent Office rejects claims 1-4, 6-7 and 11 under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,770,035 of Faita (Faita). Faita discloses a method for the production of chlorine from aqueous solutions of hydrochloric acid in a membrane electrolysis cell. The cell comprises a cathode compartment equipped with a gas diffusion cathode fed with air or enriched air or oxygen and an anodic compartment with an anode provided with an electrocatalytic coating for chlorine evolution. Figure 1 shows an electrochemical cell of Faita. The cell comprises an ion exchange membrane 1, cathodic and anodic compartments 2 and 3, anode 4, acid feeding nozzle 5, nozzle 6, wall 7 delimiting the anode compartment, gas diffusion cathode 8, cathode supporting element 9 comprising a thick expanded metal sheet or mesh 10 and a thin expanded metal sheet or mesh 11, nozzle 12, nozzle 13 and cathode compartment delimiting wall 14. The cell also includes peripheral gaskets 15 and 16, as seen in Figure 1.

Independent claim 1 describes an apparatus including a first cell frame, a second cell frame, a compartment between the first cell frame and the second cell frame to house an anode electrode, a cathode electrode, and a membrane between the anode electrode and the cathode electrode, and a screen spacer interposed between the anode electrode and the membrane or the cathode electrode and the membrane. The screen spacer comprises a gasket structure that provides a defined distance between the membrane and the electrode. See, e.g., Application, page 14, lines 9-19.

Independent claim 1 is not anticipated by Faita, because Faita does not describe an apparatus that includes a screen spacer comprising a gasket structure that is interposed between an anode electrode and a membrane or a cathode electrode and the membrane that provides a

defined distance between the membrane and the electrode. With regard to the screen spacer, the Patent Office points to peripheral gaskets 15 and 16. These gaskets appear to surround the perimeter of the cell of Faita. They are not illustrated as between a membrane and an electrode or described as providing a defined distance between the membrane and the electrode. Without more information provided by Faita, one can assume that the gaskets provide a seal around anode wall 7 and cathode wall 14 and exposed membrane 1 to prevent the escape of a fluid. It is not apparent or inherent that the gaskets also supply a spacer function as that word is defined in the Application and claim 1. See Application, page 3, lines 16-19.

With regard to the Patent Office's contention that the defined distance is a limitation of intended use, Applicant specifically disagrees. Claim 1 is directed at an apparatus comprising multiple elements. The "defined distance" phrase describes the orientation of one element to another. It is true that the device may be used in this configuration, but the same is true of any multiple element device of any utility.

For the above stated reasons, Applicant respectfully requests that the Patent Office withdraw the rejection of claim 1 under 35 U.S.C. §102(b) as anticipated by Faita. Claims 2-4, 6-7 and 11 depend from claim 1 and therefore contain all the limitations of that claim. For at least the reasons stated with respect to claim 1, claims 2-4, 6-7 and 11 are not anticipated by Faita.

Applicant respectfully requests that the Patent Office withdraw the rejection of claims 1-4, 6-7 and 11 under 35 U.S.C. §102(b) as anticipated by Faita.

B. 35 U.S.C. §103(a): Rejection of Claims 5 & 13-18

The Patent Office rejects claims 5 and 13-18 under 35 U.S.C. §103(a) as obvious over Faita in view of the article, "Newest News About Brown's Gas" (Brown). Faita is cited for its teaching regarding independent claim 1 and Brown is cited for disclosing a cell frame being transparent or translucent.

Claims 5 and 13 depend from claim 1 and therefore contain all the limitations of that claim. Claims 5 and 13 are not obvious over the cited references, because the references fail to disclose an apparatus including a screen spacer interposed between an anode electrode and a

membrane or a cathode electrode and a membrane that provides a defined distance between the membrane and the electrode. As noted above with respect to claim 1, Faita does not disclose a spacer and gaskets 15 and 17 cannot be considered equivalent to spacers as described in claim 1. Brown does not cure the deficiency of Faita. Further, there is no motivation, suggestion or prediction in the cited references to interpose a spacer between a cell frame and a membrane. Referring to Faita, it appears, for example, that anode wall 7 and cathode wall 14 are constructed to eliminate the need for any spacer.

Independent claim 14 describes an apparatus including a first cell frame including a first compartment housing and anode and a second cell frame including a second compartment housing and cathode, when the first compartment and the second compartment collectively form a compartment to additionally house a membrane positioned between the anode and the cathode and a spacer interposed between the cathode and the first membrane and comprising a gasket structure that provides a defined distance between the membrane and the cathode. As noted above with respect to claim 1, the cited references do not disclose or provide any motivation, suggestion, or prediction to use a spacer as claimed in claim 14.

Claims 15-18 depend from claim 14 and therefore contain all the limitations of that claim. For at least the reasons stated with respect to claim 14, claims 15-18 are not obvious over the cited references.

Applicant respectfully requests that the Patent Office withdraw the rejection of claims 5 and 13-18 under 35 U.S.C. §103(a).

C. 35 U.S.C. §103(a): Rejection of Claims 19-20

The Patent Office rejects claims 19-20 presumably under 35 U.S.C. §103(a) as obvious over Faita. The Patent Office notes that Faita does not expressly teach a tank containing a process solution to be treated, but a process line inherently would have been present and connected to in-flow port 5 and one of ordinary skill in the art would have considered it obvious to have added a tank to the apparatus of Faita for holding the solution to be treated.

Independent claim 19 describes a system including a ME unit comprising a first cell frame, a second cell frame, a plurality of screen spacers including a first screen spacer interposed

between the first cell frame and a first membrane and a second screen spacer interposed between the second cell frame and a membrane and a second screen spacer interposed between the second cell frame and the membrane, with the plurality of screen spacers each comprising a gasket structure that provides a defined distance between respective electrodes (anode and cathode).

Without accepting the Patent Office's inherency argument, as noted above with respect to claim 1, Faita does not describe screen spacers between an electrode and a membrane or that provide a defined distance between a membrane and an electrode. Further, Faita does not provide any motivation, suggestion or prediction for such screen spacers. Accordingly, claim 19 is not obvious over Faita.

Claim 20 depends from claim 19 and therefore contains all the limitations of that claim. For at least the reasons stated with respect to claim 19, claim 20 is not obvious over Faita.

Applicant respectfully requests that the Patent Office withdraw the rejection to claims 19-20 under 35 U.S.C. §103(a).

D. 35 U.S.C. §103(a): Rejection of Claims 8-10 & 19-20

The Patent Office rejects claims 8-10 and 19-20 under 35 U.S.C. §103(a) as obvious over Faita in view of U.S. Patent No. 5,783,051 of Hirai et al. (Hirai) and Brown. Hirai is cited for a clamping configuration.

Claims 8-10 depend from independent claim 1 and therefore contain all the limitations of that claim. Claim 20 depends from claim 19 and therefore contain all the limitations of that claim. Thus, claims 8-10 and 19-20 are not obvious over the cited references, because the cited references fail to disclose or provide any motivation, suggestion or prediction for a screen spacer comprising a gasket structure between an electrode and a membrane or that provides a defined distance between a membrane and an electrode as provided in each of claim 1 and claim 19. Applicant respectfully requests that the Patent Office withdraw the rejection to claims 8-10 and 19-20 under 35 U.S.C. §103(a).

E. 35 U.S.C. §103(a): Rejection of Claims 2-5 & 12-18

The Patent Office rejects claims 1-7 and 11-18 under 35 U.S.C. §103(a) as obvious over Lipsztajn in view of Faita and Brown. Claims 2-5 and 12-13 depend from claim 1 and therefore contain all the limitations of that claim. Claims 15-18 depend from claim 14 and contain all the limitations of that claim. Claims 2-5 and 12-18 are not obvious over the cited references, because the cited references fail to describe or provide any motivation, suggestion or prediction for an apparatus including a screen spacer comprising a gasket structure between an electrode and a membrane and that provides a defined distance between a membrane and an electrode (claim 1) or a spacer that provides a defined distance between a membrane and a cathode (claim 14). Lipsztajn does not describe an apparatus including a screen spacer interposed between an electrode and a membrane that provides a defined distance between the membrane and the electrode. Applicant is unable to find any discussion in Lipsztajn about a spacer. Applicant respectfully requests that the Patent Office withdraw the rejection to claims 2-5 and 12-18 under 35 U.S.C. §103(a).

F. 35 U.S.C. §103(a): Rejection of Claims 8-10 & 19-20

The Patent Office rejects claims 8-10 and 19-20 under 35 U.S.C. §103(a) as obvious over Lipsztajn in view of Hirai and Brown. Claims 8-10 depend from claim 1 and therefore contain all the limitations of that claim. Claim 20 depend from claim 19 and therefore contains all the limitations of that claim. Claims 8-10 and 19-20 are not obvious over the cited references, because the cited references fail to describe or provide any motivation, suggestion or prediction for an apparatus including a screen spacer that provides a defined distance between a membrane and an electrode (claim 1) or a ME unit including a plurality of screen spacers that provides a defined distance between respective electrodes and a membrane (claim 19).

Applicant respectfully requests that the Patent Office withdraw the rejection to claims 8-10 and 19-20 under 35 U.S.C. §103(a).

G. Double Patenting Rejection

Claims 1, 3-7, 11 and 13 are provisionally rejected under obviousness-type double patenting of claims 13 and 14 of co-pending U.S. Patent Application No. 10/763,691. Applicant respectfully requests deferral of any filing of a terminal disclaimer until a confirmation by the Patent Office of the allowability of the pending claims.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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